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Concept in Cognitive Linguistics and Biocognitive Science

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Abstract

The core layer of the concept is the language of schemes, images, tactile and olfactory imprints of the reality which codifies the concept for intellectual operations. This core part has national and cultural background. With the lapse of time the concept undergoes changes due to the changing worldview. The best access to the concepts, their better understanding and “transmission” are granted via verbalization, i.e., through the language.

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1. Introduction

The researchers of concepts constitute two large, but unequal groups. The supporters of the first smaller group believe that they are semanticists. They treat categories of thought and language as fully identical, relying on the provision that the language sign semantics is the only tool for concept creation. Those of the second group think that the concept is a mental matter that does not arise directly from the meaning of the word, but acts somehow as an intermediary between the word and the reality. Since this approach reflects our outlook on the problem of human understanding of the world around us, below you will find its more detailed characteristics with description of respective provisions (Pesina, Solonchak, 2014).

The term “concept” is quite broadly described in the papers on linguistic philosophy and cognitive science. It is more or less generally accepted that, reflecting the volume of human knowledge about the facts and material and spiritual being, thinking uses the basic structured units – the concepts which are created in the acts of cognition. They reflect and generalize the human experience and are comprehended in various activities. In other words, the concept represents an abstract unit used by a person in the thinking process. The individual transforms his/her

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experience into personal concepts, which are logically interconnected and form his/her conceptual system. The concept is also a combination of information stored in the memory, which ensures adequate cognitive processing of situations, and the system of concepts shapes the routine worldview of the person, i.e., his/her everyday understanding of reality.

The philosophical theory of the concepts allows reconciliation of the existing numerous hypotheses and plural opinions of the modern linguists about the essence and functioning of the concept. As G. Deleuze and F. Guattari correctly believe, concepts are crystals or nuggets of the meaning – absolute space forms. The essential properties of the concept are schematically presented by the authors as creation of the concept (it bears the author's signature and is thus personalized), nondiscursivity of the concept (the concept as a deep idea does not fully belong to the boundaries of any specific expression), correlation of the concept with any problem (thus allowing intercrossing and mutual coordination of the concepts) (Deleuze, Guattari, 1998).

1.1 The contents of Concepts

The theory and description of concepts must separate the contents and the structure of a concept. The concept structure includes the basic structural components of various cognitive natures which form the concept – the sensual image, the informational and interpretational fields. The concept structure is described as a series of cognitive attributes which belong to each of these constituents of the concept. The content of the concept is formed by cognitive attributes which reflect individual properties of the conceptualized object or phenomenon and is described as a combination of these attributes. The contents of the concept is intrinsically structured based on the field pattern – the core and the near, remote and extreme peripheries. Appurtenance to a certain content zone is determined, primarily, by brightness of the attributes in the consciousness of the respective concept carrier. Description represents ranging of the attributes from the core to the periphery from a much to a less clearer attribute.

The concept has a relatively orderly internal structure and represents the result of cognitive activity of the person and the society. It bears comprehensive encyclopedic information about the reflected object or phenomenon, about interpretation of such information by public consciousness and about the attitude of the public consciousness to a certain phenomenon or object. The concept may reflect the level of public perception of a specific phenomenon or an object, but belonging exclusively to individual consciousness, being a certain quintessence of individual cognitive acts, the concept sometimes may not include such information.

In the 90-s of the past century quite a few theories emerged. Along with “concept”, they provided for active studies of “linguocultureme”, “mythologeme”, “logoepisteme” and other similar phenomena. Often the concept was identified as the representation and was interpreted as “algebraic expression of the meaning”, “culture keyword”, “culture cluster in human consciousness”, “a bunch of representations, notions, knowledge, associations, feelings which accompany the word”, “the main culture cell in the human mental world”, “knowledge about the signified in all its links and relationships”. A meaningful memory unit represents structured knowledge quanta of the language sign meaning, named “the seed of the primary meaning”, “semantic embryo” or “notional gene”, “lexeme meaning invariant”, “aggregate complex of attributes that is used for description of the world fragment or a part of such fragment” etc.

As we can see, some of the above mentioned terms cannot be deemed as appropriate, for example, «lexeme meaning invariant». This term provokes a few objections. Firstly, which meaning is the concept (direct, metaphoric, metonymic etc.) and why the same form stands for several concepts? Secondly, if the concept by definition includes all knowledge about the object, why is it invariant? The genetic metaphors like “gene” or “embryo” cannot be deemed appropriate either, because the concept may include quite a complete scientific knowledge about an object or a phenomenon. The term “culture keyword” transfers us from the world of concepts, i.e., ideas, to the world of language. It is obvious, that the concept becomes clear only through the language, but from our point of view, the concept has yet mental nature and is actually nonobservable. Words, word expressions, expanded sentences and descriptions act as means of objectivation and verbalization of concepts in case of communicative necessity. If certain concepts are communicatively relevant and become subjects of regular public discussion, they obtain a standard language unit for verbalization. If not, then they remain nonverbalized, and when necessary, they get verbalized by descriptive tools. The complexity of the concept means that there is a bilateral link between the

language and the consciousness, since the categories of consciousness are realized in language categories and are at the same time determined by them.

However, the concept is multidimensional, and this enables different approaches to definition of its essence and structure. In addition to the notional base, it includes the social-mental-cultural part, subjective associations, emotions, assessments typical for a person. Lack of unity in understanding the term “concept” is linked with the lack of affinity of the methodological and theoretical orientations of the cognitive schools. On the whole, one can define four principal approaches to the cognitive paradigm essence: *culturological*, *semantic*, *mental* and *sociobiological*. Undoubtedly, the common point for these approaches is the affirmation of the undisputable connection of the language, the consciousness and the social environment (culture). While studying the concepts, it is impossible to ignore the culturological factor, as well as the fact that one can get access to the contents of the concepts, mainly, via the language.

It is interesting to study the culturological aspect which deals with culture as combination of concepts and relations between them, and the concept is viewed as the main culture cell in the person’s mental world or as a multidimensional discrete culturally important sociopsychic formation in the collective consciousness subjectified in one or another language form. Concepts as existence forms of culture are shaped as a result of special fragmentation of the linguistic world image into certain microworlds corresponding to all imaginable situations, known to the person and thus called “possible worlds”. They correspond to the semasiological term «semantics of possible worlds», where the main unit is the concept word – the name of a certain semantic field and that verbal and cogitative epicenter where the discourse emerges (Stepanov, 2001). The concept structure includes everything that makes it a culture fact: the original form (etymology), modern associations, assessments etc.

In this framework, concepts are often interpreted as a certain cultural layer between the person and the world as a notion of practical (everyday) philosophy being the result of interaction of such factors as national tradition, folklore, religion, ideology, life experience, artistic images, feelings and the value system. Therefore, the concept must be “assigned” in terms of culture and nationality and must stand out as the most common, extremely abstracted, but precisely represented idea of the “object” combining all valence bonds which bear national and cultural marking (Krasnykh, 1998: 130).

Researchers of national concepts attempt to find the exact number of these essences which are fundamental for the Russian culture bearers. So, A. Wierzbicka believes that there are only three of them: Fate, Sadness and Will (Wierzbicka, 1999); some authors name about forty to fifty of them, others number a few hundreds of basic concepts.

Since at this stage of cognitive science development the literature on analytical philosophy and psycholinguistics provides analysis of the most complex, bright and interesting concepts, one comes to the opinion that concepts reflect not all notions, but just the most complex ones vitally important for the certain culture (for example, *will* or *mayhap* for Russians, *order* for Germans etc.). Yet there is no unity among the researchers of concepts with regard to this issue. From our point of view, if the simple everyday concepts are not subjects of proverbs, sayings or poetic texts, they do not cease being rational units, as we cannot deny mentality of such words as *table* or *chair*. Obviously, this is rather a question of terminology: how broad the term “concept” is understood and how one defines the mental essences which are not concepts. If today’s conceptology has no doubts that there are grammatical and syntactical concepts, is there any sense in denying the conceptual nature of the simple everyday notions?

From the linguistic philosophy point of view the concept is the idea of the word, its *eidos*, the substantial inner form of the word which motivates all its uses (Rivelis, 2007: 311). It appears that this is not quite true, because, as shown in our previous works (Pesina, Solonchak, 2014), the *eidos* in its classical interpretation does not include, and rather excludes the emotional evaluation and connotative components. On the contrary, they are widely present in the concept, along with various subjective additions. The concept is neither equal to the idea of the word, as seen by E. Rivelis, because usually the word semantics is much narrower than the content of the concept. In terms of communication the concept is a cognitive model which determines in which way the speaker should use a certain language unit; in other words – it is a structured fragment of the language community’s experience of perceiving its lifeworld that is symbolized by such language unit (Tailor, 2002: 43).

Such notions as “sphere of concepts of the language” and “semiosphere” are used to denote the special field, the language aura which is associated with the storage of knowledge and skills, cultural experience of an individual

person and people in general. They are construed as a definitely structured and organized configuration of concepts which similar to mosaic shape the language speaker's canvas of the world perception. We should stress that it is extremely important to take into account the cultural and national nature of the concepts in the course of their studies. But we should not forget that the fragments of the reality are not equally reflected in the consciousness of people, even when they share the same culture.

A large portion of concepts has an emotional, expressive, evaluative halo. Thus, concepts mean linguistic expression of concentration of sympathies and antipathies that causes collision of thought, i.e., emotional and connotative essences. To a certain extent, culture determines the concept, while the concept is a mental projection of the culture elements. On the other hand, adapting to the environment, the subject that operates linguistic representations can provide different descriptions of the same phenomenon depending on his/her experience, as well as on different conditions and opportunities of interaction with the environment. Over time, thanks to the influence of a series of factors of the ever changing environment and the experience of interaction with the latter, the person's conceptual system undergoes modifications, updating the new areas of concepts.

1.2. The Innate and Acquired Nature of the Conceptual System

Nowadays there exist several theories of concepts genesis, which can be reduced to two principal ones – the theory of innate conceptual system and the theory of its gradual acquisition by the person. The innateness theory was proposed by Plato and later developed in Kant's philosophy. This theory has wide support in the modern linguistics. Following Leibnitz and Fodor, many modern researchers stick to a similar point of view: a person is born with the conceptual system that is either complete or capable of auto-development.

G. Leibnitz thought that in the brain of every born person there was a definite set of innate elementary ideas, which were latent from the beginning and then got activated and developed, as the person was gaining experience. These innate ideas are so transparent, that no explanation can make them clearer to us; on the contrary, we use these primitive ideas or senses to explain our experience. Leibnitz called these elementary senses «the alphabet of human thoughts» (Leibnitz, 1983: 430]. All complex thoughts or senses are results of various combinations of the simple ones, similar to words and sentences which we can write thanks to different combinations of alphabetic letters. The codification of complex senses in individual words may be different for different languages, because each of them may choose its unique word to denote the given combination of simple ideas. But according to Leibnitz, the proper «simple ideas», which represent the foundation of human speech and human thought, are the same for all people on Earth.

Leibnitz viewed the task of finding «notional atoms» as a difficult one that required a lot of time, but anyway, it was solvable. Its solution provided for trials and errors, i.e., lengthy and systematic search of interpretations of as many words as possible, in order to build a large and diverse empirical base and to identify the notions which would be the building materials for interpretation of all those words. That search was based on the requirement according to which the multitude of simple ideas must include only those “bricks” which are really necessary for construction of complex ideas. Everything that can be interpreted is conceptually more complex and must be interpreted; everything that cannot be interpreted (without the logical circle and not on the way from the simple to the complex or from the bright to the shaded), must not be interpreted. There is no other way to search the real alphabet of human thoughts.

The theory of innate conceptual system and linguistic abilities is usually associated with the idealistic branch of analytical philosophy, but its supporters may also stand on pure materialistic grounds. It is so because they consider innateness as a result of a special biological code shaped through evolution, and the bioprogram of a person includes the ability to create concepts (think) and speak. A variant of this theory is the experiential realism hypothesis which states that a person is born with a certain ability to abstraction (Lakoff, 1990). However, the authors realize that there are no purely innate notions.

Considering the theory of gradual acquisition of the conceptual system by a person, we can mention the concept by Piaget which says that the conceptual system develops gradually. This occurs simultaneously with the general psychophysiological development of a child (Piaget, 1983). From this point of view, child's staged cognitive development occurs somewhat faster than linguistic development, i.e., understanding of the word precedes its usage.

Although at first sight, two theories about the nature of concepts seem quite contrary. Their detailed review proves that they have many common points: both stress unconsciousness of mental processes, both believe that the world structure, as perceived by a person, largely depends of internal mental constructs of high abstraction degree. We can say that the differences between these positions are not absolute, but relative, because representatives of the two schools recognize importance of the certain degree of innateness of the conceptual system and do not deny its ability to develop.

1.3 The Concept in Biocognitive Science

The cognitive science includes a relatively new area – interpretation of concepts based on the body approach that foresees addressing the concepts and the language as a cognitive, biological and social system representing the field of communicative interactions of the organism and the environment. As for understanding of the nature of concepts, it does not correlate with the above provisions which reflect our perception of the essence of concepts.

According to biocognitive scientists, the concept is not an abstract ideal essence; it represents physiological material processes which occur in the brain cortex. Damasio underlines that the concept is focused on simultaneously reconstructed sensorial and motor representations which, quite probably, can be extracted from the memory by some nonverbal and verbal incentives. Then assigning of a name and/or verbal description constitutes only the second phase of its process (Damasio, 1999). Therefore, materiality of the concept is explained by the fact that all processes that run in the brain cortex are physiological. Identification of the signal form and its content is quite logical for a physiologist, but it is fairly narrow for viewing of the problem in the light of cognitive science, in general. For comparison: in the «Concise Dictionary of Cognitive Terms» the concept is interpreted as «an operative substantial unit of the memory, mental vocabulary, conceptual system and brain language, the entire world view reflected in human mentality» [Concise Dictionary of Cognitive Terms, 1996: 90]. We have to point out that the concept is a unit not only of the mental, but also of psychic resources of our consciousness, because it comprises the person's sensual experience too.

Some papers contain detailed characteristics of the neural basis of the concept as activation of many individual neural ensembles distributed across different brain sections, but belonging to the same set. In this case all these sections are accessed simultaneously, thanks to a word or any other sign.

Nevertheless, considering all attention to the initial provision and results of the biocognitive approach, the term *concept* under our review actually relates to unobservable categories of thought, and this provides large space for its interpretation. This mental structure symbolized by language units has individual nature (if a scientific concept is not meant) and represents a model of the speaker's orientation in the world at a certain area of his/her linguistic world-image. Based on the provision that concepts find themselves halfway between thinking and the language, we can further try to define the specific features of the conceptual and linguistic reflection of reality.

2. Conclusion

In summary, this paper presents the following essential characteristics of the concept: being the central part of cognitive linguistics, the concept is the sense with emotional and cultural marking, the mental essence responsible for shaping, processing, storage and transfer of knowledge. Therefore, the concept contains emotional, expressive, evaluative components. The concept has nation-specific features, it is the main cell of culture, presumably, it is structured (it can be stratified). The concept can be of various type and different complexity, it has a soft probabilistic structure, its boundaries are indefinite and mobile. As an image, but not as a language structure, the concept can be equal to subjective perception of the reality in a certain time period, however, it hypothetically has the core, the main and the peripheral areas. The substantive forms of the concept are the image, the notion and the symbol; their development is unbalanced, but they are also perceived differently in the reflection about the phenomenon (the word). The core part that is common for bearers of the specific language and culture ensures the communication processes (the core contains prototypic layers, which have the most sensual and visual concreteness, and primary, brightest images).

In our previous works concept core was named the *conceptual focus*. It includes the most stable central

substantive components which are universal for the given language community; along with images and emotional-sensual constituents they cover the main essence of the concept. These figurative and sensual constituents must be meaningful for understanding a certain concept; otherwise they will form its periphery.

The concept is codified in the consciousness both by a notion and an individual sensual image. Depending on the level of understanding of these essences, the conceptual focus can be manifested by a (logical) notion or a basic idea (in other terminology, «everyday/down-to-earth» notion), which are based on the most stable central substantial components that cover the main essence of the concept content (Solonchak, Pesina, 2014).

It is pure theory to talk about coincidence of the central part of concepts (conceptual focuses) of different people, because, presumably, basic concepts of bearers of the same language and culture could coincide. However, communication would be actually impossible without such common conceptual focus. Coincidence of the core content of concepts belonging to bearers of the same culture makes identification of nation-specific concepts possible.

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